

Activity Title: United in Building and Advancing Life Expectations (UBALE)	
Implementing Partners(s): CRS, SCI, CARE, CADECOM	
Award #:	
Geographic Location: Blantyre Rural, Chikwawa and Nsanje Districts, Malawi	
Operating Unit(s): DCHA Food for Peace	
PREP Year: 2018	
IEE Link: N/A	
Amount of Dollar Funding Requested in the PREP: \$	
Amount of Commodity: \$	Life of Award (LOA): \$
Activity Start and End Dates: September 2014 – September 2019	
ESR Prepared By: Dorothy Ngwira	Date Prepared: July 13, 2017
Recommended Threshold Determination: <input type="checkbox"/> Categorical Exclusion <input checked="" type="checkbox"/> Negative Determination <input checked="" type="checkbox"/> With Conditions	<input type="checkbox"/> Positive Determination <input type="checkbox"/> Deferral

USAID APPROVAL OF ENVIRONMENTAL ACTION(S):

Mission (or Regional Office, as appropriate): Linda
Mahli
Mission Environmental Officer (MEO) A. Cleared with comments. Date: 8/10/2017
Food for Peace Officer* [Signature] C. NGULUBE Date: 08/11/2017
Regional Environmental Officer (REO)* _____ Date: _____

Food for Peace, Washington:

Agreement Officer's Representative (AOR) Shahina Malik Date: 12/14/2017
DCHA Bureau Environmental Officer (BEO) Erika J Clesceri Date: 12/21/2017

CC to:

DCHA Climate Integration Lead (CIL); Regional Bureau Environmental Officer (BEO), if relevant

**Clearance recommended, but optional.*



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USAID DCHA DECISION MEMO: MALAWI FOOD FOR PEACE UNITED IN BUILDING AND ADVANCING LIFE EXPECTATIONS (UBALE) PREP ESR

PROJECT/ACTIVITY DATA

Project/Activity Name:	United in Building and Advancing Life Expectations (UBALE)
Geographic Location(s) (Country/Region):	Malawi / AFR
Implementation Start/End:	FY 2014 – FY 2019
Solicitation/Contract/Award Number:	AID-FFP-A-14-00006 and AID-OAA-A-15-00019
Implementing Partner(s):	Catholic Relief Services (CRS) consortium leader with CARE, Chikwawa Diocese, National Cooperative Business Association (NCBA) CLUSA (NCBA CLUSA), National Smallholder Farmers' Association of Malawi (NASFAM), and Save the Children

ORGANIZATIONAL/ADMINISTRATIVE DATA

Implementing Operating Unit(s): (e.g. Mission or Bureau or Office)	DCHA
Funding Operating Unit(s): (e.g. Mission or Bureau or Office)	Food For Peace
Funding Amount:	\$61,838,910
Lead BEO Bureau:	DCHA

ENVIRONMENTAL COMPLIANCE REVIEW DATA

Analysis Type:	PREP ESR
Environmental Determination(s):	Negative Determination with Conditions, Categorical Exclusion

USAID BUREAU ENVIRONMENTAL OFFICER APPROVAL

BUREAU ENVIRONMENTAL OFFICERS FINDINGS AND SPECIFIED CONDITIONS OF APPROVAL

This Environmental Threshold Decision (ETD) is to inform that the **FFP Malawi, UBALE PREP ESR** has been approved, approved with conditions by the DCHA Bureau Environmental Officer (BEO), on December 21st, 2017.

The **PREP ESR** has undergone all necessary Mission and Washington clearances and meets the minimum 22 CFR 216 requirements.

The BEO review has identified 3 issues in the **PREP ESR** that will require attention by **CRS** to ensure that all BEO conditions, detailed below, are incorporated into activity implementation. **ESR revisions** will be required by **CRS** to confirm these conditions.

Condition 1: CRS Monitoring staff work with their new environmental compliance partner, Sun Mountain International, to integrate EMMP indicators into the IPTT.

Condition 2: CRS share with the BEO the irrigation feasibility study that the consultant presented to CRS.

Condition 3: UBALE submit a list of the tree species that they incorporate into tree planting activities and indicate if any of the species are indigenous to the region.

Commendation: We are pleased that CRS has established a staff position entirely dedicated to environmentally sound design, and that CRS has hired an environmental compliance partner to simplify their environmental compliance documentation process.

BEO Conditions (3):

Issue 1: *CRS States that EMMP will not be integrated into the IPTT.*

Discussion: The BEO recognizes there is not a one-to-one correlation between language and indicator types of the IPTT and the EMMP. However, the environmental mitigation goals of the EMMP are compatible with many of the aspects of the logical framework of the theory of change. Sun Mountain International, the new UBALE partner for environmental compliance, has experience supporting similar Food for Peace programs, and has helped programs integrate environmental monitoring into existing M&E processes.

Additionally, the [USAID FFP Policy and Guidance for Monitoring Evaluation](#) specifically states that: "The EMMP needs to be in the work stream of the M&E staff, as is a formal and actionable monitoring plan to implement the activity's IEE results" (page 28) and that "incorporation of the EMMP into the IPTT and annual monitoring processes" (page 91) should be considered in the promotion of activity operations and effective collaboration among stakeholders.

Condition 1: CRS Monitoring staff work with their new environmental compliance partner, Sun Mountain International, to integrate EMMP indicators into the IPTT.

Issue 2: *In the IEE amendment, the conclusions of the irrigation impact study are presented without the corresponding data or analysis.*

Discussion: The area in which UBALE operates has extremely limited water resources, particularly in the dry season. Because of these limitations, it is important that the BEO has the data that supports the findings of the feasibility study in order to ensure all conclusions are sound and to inform any future documents submitted by the UBALE project.. The BEO does not request that UBALE prepare a second document, but would like access to the data and analysis that support the conclusions presented in the IEE amendment. The documents the consultant delivered to the UBALE staff are likely sufficient.

Condition 2: CRS share with the BEO the irrigation feasibility study that the consultant presented to CRS. .

Issue 3: *It is not clear if the variety of trees planted in order to decrease erosion includes indigenous trees.*

Discussion: One of the specific recommendations of the JMTR findings was to incorporate biodiversity and indigenous trees into the reforestation and erosion planning. We laud UBALE's intentional inclusion of biodiversity into its ESR discussion on tree planting, but the discussion does not clarify if any of the trees chosen are indigenous to Malawi or East Africa.

Condition 3: UBALE Must submit a list of the tree species that they incorporate into tree planting activities and indicate if any of the species are indigenous to the region.

1. Introduction to the Environmental Status Report

Throughout FY'2017 UBALE has strived to ensure environmental compliance across all three Purposes. With the amendment to the IEE approved and delivered to the project on May 31, 2017, UBALE has been addressing the conditions made by the BEO as progress continues. The amendment was required to enable an expanded set of assets to be created and/or rehabilitated under the Food for Assets component of UBALE. These new assets include irrigation schemes, rainwater harvesting systems, seepage wells, dip tanks and sales pens for livestock, as well as the expansion of watershed restoration works and latrine construction at health facilities. In developing the new IEE, CRS brought in an external consultant to undertake a feasibility study of the existing irrigation assets (dykes (now referred to as flood mitigation bands) and dams (now referred to as livestock watering ponds)) and the categorization of the new assets to ensure up to date mitigation measures. This feasibility study was a pre-condition for the completion of the irrigation assets and with approval in May, work began again on the deferred assets from FY'2016. In the new amended IEE, the BEO has recommended that UBALE hire an environmental compliance position and that has been added in this PREP submission. Further, a recent compliance visit highlighted no substantial concerns, was helpful in identifying a few areas for improvement, and gave the project an opportunity to meet the new MEO and discuss methodology for approval of the new assets moving forward.

In addition to the amended IEE and the addition of the staffing position now planned for FY'2018, UBALE continues to work with implementing and Government partners to address climate integration objectives. The project was designed to help farming households and their communities more sustainability mitigate against climate change through knowledge and practices that build their resilience in the “new normal” for Malawi, where floods and dry spells are more frequent and more severe. FY'2018 will mark a shift in focus for UBALE, away from technical trainings and towards capacity building through mentorship with the frontline workers and volunteers across the Purposes. This new focus will help achieve impact by mobilizing resources to ensure that promoted technologies showcased on demonstration plots move more fully onto farmer fields, and that village natural resource management and civil protection committees, along with their traditional leadership, are more empowered to establish and enforce by-laws for environmental protection and the sustainability of the assets and gains made during the project.

2. Staffing and Budget for Upcoming Implementation Year

A. Staffing and Expertise:

For the past 2.5 years, UBALE has complied with USAID regulations through a layered approach, where each Technical Integration Lead and the FFA Advisor, all spent a percentage of their time on environmental compliance. While this always served the project well and resulted in TILs that could speak to the environmental concerns related to the implementation of their Purposes, UBALE will be hiring an Environmental Compliance Officer for FY'2018 to address the BEO Condition in the amended IEE. This position will be 100% level of effort for the full fiscal year and while having no direct reports, will work closely with the TILs and FFA Advisor to ensure that the project finishes up its activities compliant with the regulations and addressing all IEE conditions fully, as well as monitoring and reporting to USAID.

In FY'2018 UBALE will continue to work with communities after they have completed their gender-sensitive participatory vulnerability capacity assessments and the VCPCs and VNRMCs have developed their plans under Purpose 3. Under Purpose 1, the project will partner with GoM

to ensure that all frontline staff within the MoAIWD have received the safe handling of chemicals training as part of their on-boarding and identify those who require a refresher. The Fall Army Worm outbreak in early 2017 has eased this burden on the project somewhat as all AEDOs received this training from MoAIWD as they rolled-out their response to the pest outbreak with the support of FAO and other USAID-funded projects. Under Purpose 2, home-visits through the Care Group model continue to spread the important message and hygiene and sanitation, including environmental hygiene. These will not be direct trainings in FY'2018, but continued support from volunteers to households who have not yet adopted the promoted behaviors.

B. Budgeting for Environmental Compliance:

With the addition of the new Environmental Compliance Officer, UBALE now has a full-time staff to address compliance issues and reporting to USAID. The majority of the FFA Advisor's time (75%) is also spent on compliance related to the EMMP and the design specifications of the assets created. A small proportion (5%) of the TILs time will be spent on monitoring compliance related to agriculture, health and resilience, in collaboration with the new Environmental Compliance Officer. In addition to the project staff, environmental staff from various Government ministries participate in joint monitoring visits of project activities including the demonstration plots, FFA works and plans developed by the communities.

Fumigation services are clearly marked in the PREP FY'2018 budget and narrative.

All assessments for the irrigation schemes created under the El Nino expanded funding are currently being completed by AgriCane in preparation for their design of the assets in compliance with the BEO condition requiring skilled technical staff such as hydrologists be brought onboard for this specific task. In FY'2018, as has been done since the beginning of UBALE, all FFA sites will also complete a site-specific IEE and the implementing partners have budgeted for these assessments.

UBALE is promoting fuel-efficient cook stoves through its Care Groups, nutrition fairs and DiNER fairs, but does not budget for this promotion directly. Each community where an asset will be created and/or rehabilitated in FY'2018 will receive a training on asset management and work norms including environmental concerns as per the EMMP. After the asset is completed, the decentralized structures in the communities responsible for natural resource management and civil protection will be trained on sustainability and planning for the long-term impacts from the assets. The budgets for these trainings are included in the FFA budgets of the partners as staff travel and time in the field.

Through the trainings to the asset management committees and the VNRMC and VCPC, the committees have their capacity built related to the mitigation and monitoring measures in the EMMP. Further, through regular, joint monitoring visits with Government partners, monitoring of compliance, the work norms and the quality of the asset are shared between project and Government staff who will continue in that role after the close of the project. These activities are all budgeted for in the PMU and partner budgets distinctly as joint monitoring visits.

3. Progress Towards Achieving Environmental Compliance

A. Previous BEO Conditions:

Policy and Process:

Condition 1: CRS Ubale must designate an environmental compliance staff to oversee implementation of monitoring and reporting.

In response to this condition, UBALE has added this position for FY'2018 to oversee compliance monitoring and reporting to USAID.

Condition 2: submit a EMMP and work plan with revisions made following the Malawi, Climate and Environment workshop

As the IEE amendment has been approved, UBALE has put together a complete EMMP for all assets being implemented in FY'2017 and FY'2018 as well as the other project activities that have environmental implications as defined in the original IEE. The EMMP is attached with this ESR and UBALE will work with the new MEO to finalize their work plan.

Condition 3: Cross reference findings of the EMMP with the IPTT, as in FFP M&E Policy.

During the M&E Plan review and finalization process no mention was made by USAID Washington or Pretoria regarding the inclusion of EMMP monitoring in the IPTT, prior to its inclusion as a condition in the IEE. The IPTT includes 140 indicators related specifically to the project logical framework and Theory of Change as per the guidance received, and it is not clear how environmental compliance indicators would be reported as compliance topics are not traditionally reported in the IPTT. For instance, the project does not report in the IPTT on its financial management, auditing, or commodities compliance, although it implements activities throughout the year towards compliance.

The program has an approved M&E plan that monitors program performance, the IEE was approved to ensure activities themselves either do not have negative impacts on environment or that we take appropriate measures, the EMMP which describes how we will mitigate and monitor the environmental impacts, and the ESR to report annually on the status of all of these.

Technical:

Condition 4- Provide information on the number and scale of the rainwater harvesting systems, as well as their proximity to watershed and irrigation activities.

The siting for the expanded assets is currently being completed as AgriCane finalizes the feasibility assessments of the proposed irrigation schemes. That said, the irrigation works will combine seepage wells, reservoirs (as appropriate) and the channels to meet the determination in the IEE that the schemes not use surface water. Based on the Joint Mid-Term Review, the project will continue to work with the Health Facilities where latrines were constructed to make sure that rainwater harvesting systems are installed to collect in a tank on the premises for use for handwashing and laundry. These works will be small, enabling run-off from rooves to collect in a 5000L tank. As the irrigation schemes are finalized all information will be delivered to the MEO, along with the site-specific IEE documents as per the agreement for approval with the Mission Office.

Condition 5: The irrigation feasibility study must be shared with the BEO.

UBALE communicated with the AOR that the IEE amendment included the feasibility study results. If this is not sufficient, the project will work with the consultant to develop a separate report on the flood mitigation bands and the livestock watering ponds.

Condition 6: Provisions should be made to ensure that only livestock pens in suitable sites are candidates for refurbishment. Explicitly cite the criteria used to determine.

UBALE is working with GoM MoAIWD district offices to identify the sites to be selected for rehabilitation related to livestock and with them developed criteria that ensured an active livestock group in the community. The sites are currently being finalized and UBALÉ will submit the final list of sites, their specific reason for selection and the works to be performed to the MEO for approval as was agreed upon with the Mission Office.

Condition 7: In the watershed restoration and tree planting activities, clarify if activities are anticipated to take place in--or directly affect--any protected areas. If so, the plan for complying with the restrictions placed on the protected area must be developed and shared with the BEO. UBALÉ is not implementing its FFA activities in any protected areas and this was discussed during the MEO compliance visit, with the MEO confirming the same during conversations regarding protected areas in the three districts.

Condition 8: Reforestation and watershed restoration efforts need to ensure multiple tree species are planted, and must procure indigenous tree species to be included in reforestation efforts. During the Joint Mid-Term Review it was noted that in some project-supported nurseries, there was not much variety in the tree seedlings being raised. During the first season of support, a variety of tree seeds were given and those species planted on the riverbank and watershed sites. However, with the El Nino in 2016, many communities focused on raising those tree species that they trusted would survive. UBALÉ, through its continued capacity building of the VNRMC is highlighting the importance of multiple trees for different uses on the restoration sites moving forward. To address the second component of the condition, the project is promoting a mix of tree species, indigenous in nature and since the JMTR has remove Senna Spectabilis from the list of promoted trees as the BEO Representative informed the project is was now considered invasive in other countries.

Condition 9: Activities should be designed for a more drought and flood prone future, rather than for the historical or 'traditional' climate conditions.

UBALÉ was designed to help make communities more resilient to climate change impacts. The agricultural practices promoted, the maternal and child health topics covered, and the governance efforts, all, in addition to the direct resilience and natural resource management activities, are designed to ensure households are better able to respond to the "new normal". The recent El Nino, and the JMTR highlighted that erratic rains and more frequent floods will be more common and that UBALÉ staff should stop assuming that next year will be a good year and instead start refining training and messaging to treat the droughts and floods as normal. Specifically, recommendation 16 stated that the demonstration plots should be adapted so that they are actually climate-change-smart with a focus on enabling productivity of diverse crops through lean seasons. UBALÉ feels that this is an important recommendation and one that the project is keen to address through expansion of demonstration plot activities to farmer fields, and creating more direct linkages between Purpose 1 and 3 and described more fully in Section D below.

Condition 10: UBALÉ must proactively provide -at the minimum- pesticide safety training for the field extension officers of the Government of Malawi. UBALÉ must develop a SUAP to adhere to USAID Malawi PERSUAP for all dip tanka acaricide pesticide use planned, given that 4 acaricides are identified as "red" and "do not promote".

UBALE is working with the Community Animal Health Workers (paravets) to deliver the required training so that MoAIWD Livestock Department can, after a certification period, certify them as Paravets. Part of this training curriculum is a module on safe handling of chemicals and the proper disposal of waste related to their work with livestock in the rural areas. The project is currently working with Government to develop the SUAP to address concerns with the acaricides for the dip tanks and will submit it to the MEO for approval.

Condition 11: Demonstrate a mitigation plan for water quality issues for this activity, and a monitoring system for the proper maintenance use of the well.

The seepage wells to be developed by UBALE in FY'2017 will all be linked to irrigation schemes designed by AgriCane and be clearly marked as not for consumption. Trainings to management committees and maintenance committees as well as the VCPC will all highlight the danger of contamination in a shallow well and remind community members the types of safe water sources as per GoM MoH guidelines.

B. EMMP Reporting:

As an amended IEE was submitted and approved in FY'2017, no revisions or modifications to the Initial Environmental Estimate are needed I FY'2018. UBALE program activities have not changed and the UBALE IEE for the non-FFA activities remains unchanged. All the conditions and the Environmental Management Plan (EMP) in the approved IEE remain the same, the amendment received May 31, 2017 updated conditions from the original IEE and approved the propose monitoring and mitigation measures for the additional FFA assets under the El Nino funds.

Further, all mitigation measures were successful at preventing environmental issues as specified in the original IEE. A description of the compliance measures taken is attached to this ESR. The UBALE program implemented activities across all its three Purposes as described below.

Purpose 1: Small holder farming households sustainably increase productivity of nutritious and profitable farm products.

Under this purpose, the program implemented the following key activities:

Sub-Purpose 1.1: Farm management and business planning practices of vulnerable farming households improved

1. Supported and supervised Private Service Providers (PSPS) and apprentices to facilitate formation and training of new groups in SILC methodology
2. Assessed and graduated SILC Field Agents into SILC PSPs
3. Identified learners among SILC group members and linked them to government supported adult literacy and numeracy classes.
4. Supported and ILC Field Agents (FA) and Private Service Providers (PSP) to forming new SILC groups.
5. Assessed and graduated FA
6. Conducted review meetings with PSP networks
7. Supported government extension workers and lead farmers to mount mama and baby demonstration plots promoting various climate smart and soil productivity improvement practices including use of gliricidia trees in crop fields, legume – cereal intercrop, legume – legume intercrop (double- up legume), use of green manure cover crops. The project provided supplied the demonstration fields with maize seeds, legume seeds, fertilizer tree seedlings (Gliricidia) and fertilizers

8. Conducted DiNER Fairs to support selected farmers with various seeds including cereals (maize, sorghum, millet), legumes (groundnuts, beans, cowpeas, pigeon peas), sweet potato vines, sesame and vegetables.
9. Supported existing seed multiplication and tree nursery groups and formed new ones where applicable and trained them to multiply crops/ varieties promoted by the project. The crops included orange fleshed sweet potatoes and beans, gliricidia tree nurseries.
10. Supported extension frontline staff to produce extension videos to support promotion of the various agriculture technologies.

Sub Purpose 1.2: Marketing club, cluster and association member's agricultural sales increased

1. Trained Marketing Filed Agents (MFAs) in 7 Steps of Marketing and constitution formulation for clusters and clubs
2. Trained NASFAM staff and MFAs in good governance.
3. Supported the MFAS to deliver the good governance training to marketing cluster committees.
4. Registered farmer marketing clubs and facilitated formation of marketing clusters.
5. Supported MFAs and Clusters to elect cluster members to be part of the association committee (interim committees of the associations).
6. Trained MFAs in use of PICS bags for crop storage. The MFAs conducted demonstration to clubs PICS on the use of PICS bag technology.
7. Trained MFAs in warehouse receipt system. Supported MFAs to facilitate es collective marketing by marketing clubs and clusters.
8. Conducted a livestock value chain study whose findings will inform and guide UBALE project potential investment areas.
9. Worked with government Ministry of Agriculture and Ministry of Trade – department of cooperatives to conduct an audit of registered agricultural cooperative in Blantyre Rural, Chikwawa and Nsanje. Based on the findings of the study UBALE is to support primary agriculture cooperatives for Cotton, Rice and Legumes to address performance gaps identified. Working with government of Malawi, UBALE will support efforts to have the cooperatives form secondary level cooperatives on marketing.

Sub Purpose 1.3: Members of marketing clubs, clusters and associations increased use of sustainable financial services

1. Worked with Malawi Union of Savings and Credit Cooperatives (MUSCO) to mobilize communities in Nsanje, Chikwawa and Blantyre to form one farmer's savings and credit cooperative (SACCO) for the three district which will be anchored to the value chain activities that UBALE is promoting through Farmer Associations and Cooperatives.

Sub Purpose 1.4: Selected individuals establish/strengthen businesses

1. Identified community members who are being trained and coached to provide business development services in the UBALE project districts to potential clients. The 26 are being trained as a measure to fill the gap of rural business development services

Immediate Outcome 1.5.1: Females and males jointly and equitably manage their household resources

1. Supported collaboration between gender champions and Field Agents / Private Service providers to schedule and allow the gender champions hold gender dialogues with SILC group members.

Purpose 2: Improved nutritional status among pregnant and lactating women and children under the age of two

Under this purpose, the program implemented the following key activities:

Sub-Purpose 2.1: GoM MCHN/WASH systems management practices are improved

1. In Chikwawa CADECOM re-assessed the DNCC that was formed with project support
2. Orientated the Community Leader Action on Nutrition (CLAN) structures regarding their roles and responsibilities
3. Facilitated trainings of water point committees on community based management of water points across the 3 districts but these trainings are still on-going up to end of September 2017 and beyond

Sub-Purpose 2.2: Targeted households adopt evidence based behaviors that reduce the prevalence of malnutrition

1. Facilitated establishment of new care groups in Chikwawa district
2. Trained approximately 8,000 Cluster Leaders have been trained in Hygiene and Sanitation, Maternal health and Nutrition and CCFLS in their respective Care Groups through 176 trained Care Group Promoters.
3. About 1320 Cluster leaders in Blantyre rural has been trained in Breast feeding module through 36 trained care group promoters
4. 2,830 children, 682 pregnant women and 654 lactating mothers have been reached with Community-led complementary feeding and learning sessions (CCFLS)
5. Nutrition fairs were done through CCFLS, DiNER fairs and other standalone events
6. A total of 209 CLANs have been oriented to their roles in moving nutrition response in their areas and on Scaling up Nutrition (SUN) interventions
7. 21 grandmother events were conducted in Blantyre focusing on barriers to adoption of healthful behaviors.
8. A total of 81,809 children and 20,484 pregnant and lactating women have been reached with food rations during the lean season of September 2016 to March/April 2017.

Purpose 3: Communities are empowered to contribute to their own sustainable development

Under this purpose, the program implemented the following key activities:

Sub-Purpose 3.1 Community structures (ADC, ACPC, VDCVCPC and NRM committees) are implementing plans to improve governance, reduce risk and enhance environment

1. Trained village civil protection committees and village natural resources management committees in disaster risk management and natural resources management
2. Conducted participatory vulnerability and capacity assessments and developed Disaster Risk and Natural Resources Management Plans
3. Facilitated development of 168 DRM and 159 NRM plans
4. Facilitated establishment of 264 tree nurseries
5. Facilitated planting of trees in the field

Sub-Purpose 3.2: Communities have productive assets

1. Site identification of 89 health facilities for latrine construction, 30 watershed management sites, 45 river bank protection sites, 5 dams for watering livestock, 4 flood protection bans and 10 evacuation sites were done in coordination with Ministry of Agriculture and Water

Development and the Department of Environment at district level as well as the District Health Office. All the mitigation measures stipulated in the EMP were implemented during the implementation period. Watershed management, riverbank protection, construction of latrines with hand washing facilities, construction of flood protection bands (dykes) and rehabilitation of evacuation centers were screened for potential negative environmental impacts and appropriate mitigation measures were planned to be implemented in order to address the negative impact of the environment.

2. Developed and constructed 89 latrines in health facilities 30 new watersheds and 15 that were restored both covering about 1500 ha, 5 dams for watering animals and planted trees along critical areas of some 45 river banks covering about 142 Ha, construction of 5 flood protection bands (dykes) of 1 kilometer each and rehabilitated 10 evacuation sites works will be completed by September 2017.
3. Conducted trainings to asset management committees on how to implement the food for asset activity, specifications/standards of various assets how to manage the distribution of man days and how to maintain good records such as daily attendance registers.
4. Conducted Initial Environmental Examinations before asset development in order to let the communities be aware of the adverse impact of developing the asset and be able to integrate the all the mitigation measures during implementation.
5. Established 75 tree nurseries raising the following types of trees: neem, gliricidia sepium, senna siamea, moringa, pawpaws mangos and faidherbia albida. The emphasis on the type of trees to be raised was to use locally available seeds.
6. Planted trees along critical areas in 45 river banks, 30 watersheds and surrounding areas of 5 dams for watering livestock.
7. Planted vetiver and trees in 15 watershed restoration sites under El Nino funding.
8. Through the EMP awareness that were conducted during site identification in coordination with the Department of Environmental Affairs, the program agreed on having simplified checklists that can be used by extension staff and participants to assess progress in implementing the mitigation measures.
9. The project received additional resources to rehabilitate dip tanks, livestock pens, irrigation schemes and expand watershed management activities therefore a feasibility study and amendment of the IEE was done. The IEE and EMP therefore was amended and approved taking into consideration of the additional assets that are to be implemented using El Nino Funds. The activities under El Nino works will be completed by September 2017.

Sub-Purpose 3.3: Women participate in decision making structures

1. Different stakeholders were trained on Gender Equity and Diversity
2. Male and female gender champions were identified by the communities and were later oriented and trained on GED and how to conduct gender dialogue sessions on different themes/topics.
3. The Gender and Sustainability Officers and Gender Champions started conducting gender dialogue sessions on various themes/topics including communication and listening skills, joint decision making, women's empowerment, gender based violence with all UBACLE groups (SILC, VCPC, community leaders e.t.c) within the communities.
4. Gender reflection sessions are conducted with all staff and gender champions. During these sessions, staff as well as gender champions reflect on their own gender experiences and biases using the dialogue tools within the Gender Equity and Women's Empowerment manual. The space allows staff and gender champions to share experiences, develop support strategies and actions responding to the different challenges that arise in the field.

EMMP Progress

Under Purpose 1, the EMMP identified some potential hazards that need mitigation and monitoring including: concerns related to adverse social impacts, marginalization and conflict; risks of soil erosion on the demonstration plots and degradation of hedging for mulch; and potential cutting of existing trees for use in bio-pesticides. To address these concerns the project activities were designed to mitigate the risks identified, working with Government and communities to take ownership of the activities and better understand potential hazards for sustainability.

The process of selecting DiNER Fair program beneficiaries included community sensitization meetings and the household selection was guided by set of guidelines and involving community members. The DiNER Fairs were also conducted in an open and accountable manner where the beneficiaries are openly verified by the community leadership on the fair day and buying and selling transactions take place in view of the public. The project also formed groups to multiply planting materials of crops that are promoted by the program such as NUA Beans, orange fleshed sweet potato and fruit trees, so that people that have not participated in the DiNER Fairs have a chance to access to the seeds as well. To monitor the process of registration, the project used its C-MIS to ensure that households did not benefit from more than one round of fairs, increasing the reach of the approach to more vulnerable households across the districts during both the rain-fed and winter planting seasons. Further, random checks were completed on selected DiNER fair beneficiaries to determine that they received what was promised, that they were also benefitting from other UBALE interventions meant to improve household food security, and that they were not being marginalized by the communities based on the fact that they had received the seed vouchers.

UBALE is training Community Animal Health Workers (CAHW) to offer their services at a fee to livestock groups and households in the districts and the project is not paying for the service fees. It is felt that this approach reduces the concern that regarding conflict and sustainability compared to if the project was paying for the services and to selected beneficiaries only. Further, the CAHWs are trained in “Drug Box Management” (DBM) as per the Government of Malawi training curriculum, covering issues of dangers of drugs and how to keep and administer them. CAHW DBM protocols emphasize that the worker can only administer vaccines and de-wormers but not antibiotics which can only be administered in the presence of a government Assistant Veterinary Officer (AVO) or his/her senior. UBALE, with Government, monitors adherence to the DBM protocols during the certification period and uses this monitoring to correct and improve service delivery by the CAHWs. In addition to the CAHWs receiving the training through the project, the Fall Army Worm outbreak of 2017 saw Government of Malawi receiving support from various agencies including FAO and European Union to control the pest to reduce crop damage. One of the methods promoted by the government was application of chemical (Cypermethrin) and all front-line government extension staffs (Agriculture Extension Development Officers) were trained on the pest and control methods including the safe handling and use of chemicals.

To address soil degradation concerns, demonstration plots in fields with slopes of more than 2% are mounted on ridges that are on contour and other soil and water conservation measure are implemented such as digging water harvesting trenches on the contour (swales). In places where

fields are at less than 2% slope, farmers may not make ridges on contour ridges but instead make planting basins which also harvest water. Lead Farmers are trained to cover demonstration field with dead plant materials from previous crops as mulch depending on availability of these cover materials, but not to collect hedging for this purpose. To further address the issues of ground cover, UBALE is promoting Conservation Agriculture With Trees (CAWT) with gliricidia trees on the demonstration plots, to provide shade as well as biomass from the leaves which increase soil fertility when decomposed and mixed with soil.

In addition to CAWT, the project is also promoting green cover crops to reduce dependence on soil cover materials that may come from other fields, reducing risk of degradation, but also labor requirements from the farmers to ensure adequate cover. The UBALE strategy offers a variety of legume crops and trees to suit the needs for areas where people keep a lot of livestock and where people do not keep a lot of livestock, and offers technology options for hilly areas versus gentle or flat lands. In addition, communities are sensitized on the need to manage their livestock – something they do already during the rainy season (main cropping season). Ultimately, it is the fertilizer trees that will minimize the conflict for fodder for livestock and mulch for soil cover as gliricidia trees are not eaten by livestock except anecdotally in situations of dire stress such as the 2016 El Nino.

Lead Farmers were supplied with pigeon peas seed and short maturing cow pea seed to intercrop with maize in the demonstration plots. Only a few lead farmers in Blantyre Rural planted lab-lab seeds as seed was very scarce. Apart from fixing nitrogen in the soils, the three legume crops also provide soil cover that reduces soil erosion and soil water loss due to intense sun. The short maturing cow peas provide soil cover quicker than the other two, but pigeon peas and lab-lab continue to grow in the field covering the soils for several months after maize has been harvested. This year gliricidia trees established well and the project is now focusing on training farmers on how to manage the trees for soil cover, biomass for soil fertility improvement and dispersed shade to the crops.

To monitor progress towards these mitigation measures on the demonstration plots and in preparation for hand-over to Government in FY'2019, UBALE will formalize site-specific EMPs for the plots at community-level in FY'2018, ensuring that Government frontline staff are able to track mitigation measures implemented after close of the project. During joint monitoring visits with MoAIWD staff, UBALE will monitor progress on the establishment of these plans and report annually to USAID on progress. This EMP will also ensure that any new Lead Farmers are trained in safe use and application of chemicals including fertilizers and pesticides, as per MoAIWD protocols, as their demonstration plots are mounted. With the Fall Army Worm outbreak of 2017 all MoAIWD frontline staff received a refresher safe use of chemicals training in FY'2017, given by Government.

Lastly, regarding the concern that neem trees may be cut for bio-pesticides, and as such, lead to unsustainable use of the trees promoted by the project, UBALE is working very hard to ensure that communities plant a variety of trees (neem, senna siamea (cassia siamea), moringa and other fruit trees) as part of the rehabilitation of watershed and riverbank areas to serve many purposes. The project is not promoting the use of the trees for bio-pesticides, but instead the use of the dried leaves as a potential pesticide against Fall Army Worm. All planting materials promoted are sourced locally and do not require pesticides to grow in the nurseries.

Under Purpose 2, the EMMP raised concerns regarding the construction of the latrines under FFA at the health facilities, including risk of soil erosion during digging of the pits; and risks of potential water contamination if the latrines are poorly sited. Related to the lean-season condition ration to mother-child pairs, the EMMP identified two risks: increasing consumption of wood for preparing the rations and for the CCFLS sessions; and the risk of social conflict if the targeting is not well implemented.

To address the concerns related to the latrines, the project, in collaboration with GoM Ministries of Health and Works, ensured that the latrines followed Government protocols for design and siting and met the minimum standards outlined by USAID through joint monitoring visits to all sites. The latrines are all at least 50m away from water sources at the facilities, and are constructed using cement bricks and blocks instead of traditional burnt bricks. Local artisans were used to construct the cement bricks where used and construct the structures at all facilities. The project has constructed a total of 89 pit latrines (additional 60 using El Nino funding) and is currently training health facility staff on maintenance and management.

Further, waste water from the handwashing facilities installed (tippy-taps as promoted at HH-level) is channeled through a drainage system of rocks to reduce pooling of water and potential health risks. The 176 Care Group Promoters and their 732 Care Groups have been trained in hygiene and sanitation this year, reaching approximately 96,000 households with knowledge and skills on the importance of proper drainage under handwashing facilities (tippy-taps). Water-point committees have also been trained across the districts on management of water resources to avoid waste water infiltration that can contaminate the water source.

To address the concerns around firewood consumption, UBALE is promoting eco-friendly fuel-efficient cook stoves made of clay through the Care Groups, CCFLS and nutrition and DiNER fairs. Additionally, Care Group households, through home visits and CCFLS sessions are encouraged to use residue from plants such as pigeon peas instead of trees from the forests, and the fuel-efficient cook stoves only allow for smaller pieces of wood to be inserted promoting the use of dead wood branches over cut trees.

To reduce the risk of social conflict among the mother-child pair beneficiaries, UBALE holds sensitization sessions each year to encourage all households that meet the set conditionalities (ante-natal attendance and growth monitoring and promotion participations) to register with the Health Surveillance Assistant or Health Promoter in their areas. In FY'2017 a door-to-door registration was undertaken to reduce the risk of missed beneficiaries. In FY'2018, this list will be updated in a more efficient manner, working with the structures on the ground to validate the 2017 list and add in any new pregnant women and children. Lastly, to ensure that the project does not unintentionally lead to open defecation, all food distribution points for the mother-child pair feeding were selected based on access to adequate sanitation facilities.

Under Purpose 3, several risks were identified in the IEE related to the NRM and FFA activities to be implemented, including: risk of stripping land for nursery set-up; potential conflicts over water usage for nurseries versus home consumption; risk of mismanagement of improved areas; risk of soil erosion and degradation from many of the FFA activities; and risk of social conflict related to FFA beneficiary selection and land rights, specifically with the irrigation assets.

To address the issues regarding the tree nurseries at GVH-level, UBALE has partnered with the Forestry and Land Resources Department and ICRAF for guidance on selected tree species for

promotion and planting to ensure that the tree planted are local and demand-driven. Further, to ensure that the establishment of the nurseries does not cause unintended consequences, UBALE developed a comprehensive natural resource management manual used to train the Village NRM Committees, and includes a module on location and management of nurseries, including sustainable methods for collection of soil for the seedlings. In addition to training the VNRMC on the nursery management, the project is building their capacity to oversee all NRM-related issues in their communities through the establishment of by-laws for rehabilitated areas that govern the use of products from the watersheds and existing forests. The project Coordinators visit the committees monthly and the field officers weekly to monitor that the nurseries are being implemented as planned in addition to their other activities. These visits open space for discussions on land access rights and any potential social issues before they become barriers to sustainable development.

Given the variety in the FFA assets to be constructed and/or rehabilitated, each asset type has specific mitigation measures for addressing the specific environmental concerns as described in the original IEE and the amendment for the expanded asset types. In FY'2017 so far in addition to the latrines constructed at health facilities as discussed under Purpose 2, UBALE has rehabilitated 5 livestock watering ponds, constructed 5 flood protection bunds, implemented riverbank protection measures in 45 critical areas (134Ha), and rehabilitated 45 watershed areas for improved management and water harvesting capacities including gully reclamation, contour ridging and stone check-dams on watershed areas of approximately 50Ha for a total of 2,250Ha. Each riverbank site targets to plant 7,000 trees with project support and watersheds close to 10,000 trees. UBALE is now tracking survival rates through the VNRMC and VCPC records and to date has achieved an 82 percent survival rate, including trees planted during the El Nino.

During the development of the structures the following mitigation measures were implemented:

- Built ties, planted vetiver/elephant grass surrounding the livestock watering ponds following the contours;
- Selected flat nursery sites which are less susceptible to erosion;
- Designed treatment structures that took into consideration factors such as slope and rainfall intensity to determine the size and spacing of the structures to be constructed on the watersheds;
- Watershed treatments such as continuous contour trenches, swales, stone bunds and check dams were designed and laid out to minimize risks of overtopping or breakage;
- Tree nurseries were established as sources of trees to stabilize loose soils in construction areas as well as to plant them in the farm land (agro-forestry) and along river banks and areas surrounding dams for watering animals. The tree species raised were locally available including neem, senna siamea, moringa and grilicidia sepium;
- FFA beneficiaries used hoes to excavate areas of construction to reduce air pollution;
- Communities were properly sensitized on utilisation of water from the dams for watering animals and not human consumption; and
- Communities sensitized on the criteria for selection of participants of FFA activities to reduce conflict.

Each asset that is created by UBALE has a site-specific IEE/ESF developed to ensure that the EMMP measures are known and implemented. Through monthly visits by district-level teams and periodic monitoring by other consortium members and Government counterparts, UBALE works to ensure that all environmental works are implemented as designed to achieve the greatest impact from the work in a sustainable manner. These visits monitor whether contour

ridges are actually on the contour, heavy works are implemented to avoid breakage, that communities are continuing efforts to rehabilitate the environment including mobilization of grasses and tree seeds to increase vegetation on the watersheds, and monitoring the species of trees planted through these continued efforts to ensure that they are indigenous and/or approved by Government if non-indigenous.

Mitigation measures to check impacts arising from construction of irrigation infrastructures, seepage wells, rehabilitation of dip tanks and livestock sales pens have not been reported since the implementation of these activities will be done in July-September quarter and this will be after 2018 ESR has been submitted. However, the project will make sure that all the impacts arising from implementation of these activities are observed according to attached amended EMMP through routine monitoring of the works as described above.

See Annex 1 for the complete EMMP for the UBALE project, including the original works and assets plus the new assets covered by the amendment.

C. Integration into Performance M&E Systems:

The program has an approved M&E plan that monitors program performance, the IEE was approved to ensure activities themselves either do not have negative impacts on environment or that we take appropriate measures, the EMMP which describes how we will mitigate and monitor the environmental impacts, and the ESR to report annually on the status of all of these.

D. Reducing Risk from Climate and Other Environmental Limiting Factors:

To address risk from climate change and the related JMTR recommendation #16, UBALE will work to ensure wider application of promoted technologies in FY'2018. The project has been making great gains on the demonstration plots and within the restored watersheds in the communities served, but there is need to ensure that all farming households are applying these new ideas on their lands. The package of activities for promotion by UBALE to be brought from the demonstration plots to farmer fields include:

- **Increasing soil health and productivity** to significantly reduce the impacts of drought, and help mitigate the impacts of floods. The primary focus is on increasing soil organic matter through the use of green manure/cover crop systems, and especially the use of gliricidia and pigeon pea intercropping;
- **Conserving soil moisture through mulching** to protect it from the sun and heavy rain, and reduce evapotranspiration, especially in the early stages of crop growth when the soil of otherwise bare. Again, the use of gliricidia is especially useful for this, but ratooned pigeon pea can also be very effective;
- Planting **drought tolerant crop species and varieties** including 60-day cowpea (Sudan 1), early-maturing pigeon pea for the lower Shire (Mtawajuni) and **ratooning pigeon pea**; sorghum and/or pearl millet;
- **Improved seed storage/PICS bags** is a critical component of the UBALE strategy to address the new normal. It should be noted that many different types of seeds can all be stored (in separate containers) in the same PICS bag;
- **Diversification of production systems** is another very important strategy. Such strategies should include Conservation Agriculture with Trees (minimum tillage, gliricidia and intercropping); Doubled-up Legume systems (groundnut or soybean intercropped with pigeon pea), and maize/pigeon pea intercropping and/or maize/lablab intercropping for the Recover group; and

- **Linkages to P3** encouraging all farmers to utilize the above-mentioned strategies as part of the DRR strategies of communities. After all, resilient communities need to be composed of resilient households. The same message should be repeated regularly and often by essentially all leadership and technical support staff at community and Area levels.

Additionally, through resilience and governance work with the decentralized local structures at community-level, UBALE will in FY'2018 create more demand for accountability and good governance, and ensure communities are more empowered to mobilize resources from various sources throughout the year to meet their needs as they perform the activities on their annual implementation plans that feed into the success of the development plan for the community. By working with Government line ministries in these trainings and capacity building activities, communities also receive better services and have greater access to information and support after the end of the project.

E. Fumigation Programmatic Environmental Assessment:

The goods received are fumigated before they are shipped to Malawi and based on the call-forward timing and the distribution schedule, no fumigation is anticipated on a regular basis. Instead, UBALE fumigates as needed dependent upon scenario when commodities are received infested. As such, there is no previous plan, but UBALE is currently developing a plan, using the template from USAID, for FY'2018 and will submit to the MEO by 31 July, 2017.

I. ENVIRONMENTAL MITIGATION AND MONITORING PLAN (EMMP)

1. BEO Condition EMMP AMENDMENT (and considered under the additional funds)

1.1 Mitigation Measures to irrigation activities, using Seepage well

Activity	Potential Impacts	Mitigation measures	Monitoring indicators	Timing and frequency	Responsible Parties
1. Land clearing, top soil removal, de-stumping/ tree removal for seepage well, drilling and for canals establishment	Destruction of vegetation during land clearing,	- Work will be limited to the area required (no un-used land will be cleared).	- Minimal area cleared	Daily during the construction phase	"Community Team Leaders" during FFA activities
	Soil erosion could increase during this phase,	- Soil erosion and siltation will be minimized using mechanical and biological erosion control techniques.	- Mechanical and biological erosion control measures in place	Daily during the construction phase	"Community Team Leaders" during FFA activities
	Siltation of land downstream,	- Ensure soil compacting to avoid siltation of downstream land	- No evidence of land siltation downstream	Daily during the construction phase	"Community Team Leaders" during FFA activities
	Scattering of plant debris.	- Vegetative material will be used for composting, for staking, and for home heating and cooking material, and stored when necessary away from potable water sources.	- Compost pit or appropriate location for debris - Debris is composted and/or otherwise disposed of	Daily during the construction phase	"Community Team Leaders" during FFA activities
2. Staking and digging canals, digging seepage well and drilling	Risk of soil erosion and siltation	- The slope of the canal will be constructed using technical norms to reduce erosion risks. - A schematic plan showing the cross-sectional shape and size of each canal will be developed	- Slopes are moderate (<15 degrees), and planted with locally appropriate species - The sides of the canals are stable	Once a week during construction phase	Infrastructure supervisor and GoM staff,
	Air pollution from excavations and compacting	- Workers will be located at a suitable distance from each other, to minimize the production and problems related to dust. - Only people involved in diggings have to stay	- Workers wear masks and are generally located at least 1 m apart during	Daily during the construction phase	"Community Team Leaders" during FFA activities

		at the site	construction (when possible).		
	Soil deposits in the parcel	- Ensure soil compacting to avoid siltation of downstream land	- No evidence of soil erosion at the scheme	During implementation phase.	"Community Management committee"
	Social conflicts when canals, seepage well or drillings cross or build in private land	- For new canals covering private land, negotiations between farmers, with the infrastructure management association, and with the community will be held to avoid conflict. - Local authorities (including traditional authorities) will be involved, to ensure legal authorization for the construction.	- Letters from land owners approving access and construction.	Before any activities at the scheme	Infrastructure supervisor and GoM staff, "Community Management committee"
3. Canals profile (only for concrete canals)	Canals may be blocked if topography pathways are not properly analyzed	- Properly dig canals in appropriate technical norms - Embankments will be hand compacted and protected with vetiver grass.	- Water flowing along canals, there is no water blocked	At the end of the concrete canal construction	Infrastructure supervisor and GoM staff, "Community Management committee"
4. Removal of landslides and siltation	Increased soil erosion and siltation if debris is inappropriately removed and stored	- Debris will be stored in an appropriate location - Removal of debris to appropriate locations	- Compost pit or appropriate location for debris	At the end of the concrete canal construction	Infrastructure supervisor and GoM staff, "Community Management committee"
5. Backfill of barrow pits for seepage well materials	Soil erosion in the barrow pit for seepage well material, and in the backfill site. Conflict with local land owners.	- The barrow pit will be rehabilitated (mechanically and biologically) to limit erosion. - For backfilling, a barrow pit will be used, and excavations will be superficial and not deep. - Soil removed from the diggings will be reused to fill barrow pits.	- Barrow pits rehabilitated	At the end of the concrete canal construction	Infrastructure supervisor and GoM staff, "Community Management committee"

6. Hardware construction concrete canals,	Social conflicts if canals are crossing private land	<ul style="list-style-type: none"> - Conduct inventory of land owner all along concrete canals, - For private land, require a legal authorization for the construction - Construction will be limited to the minimum area required, and construction will be implemented by skilled workers. - To the extent possible surface materials (stones, sand, etc.) will be used. 	<ul style="list-style-type: none"> - Hardware constructed using technical norms and standards. - Anti-erosion measures in place 	During the construction phase Before construction, for acceptance letters.	Infrastructure supervisor and GoM staff, "Community Management committee"
7. Maintenance: Repairs to infrastructure, clearing, silt removal, erosion control, planting trees and grass	Risk of erosion if not done properly	<ul style="list-style-type: none"> - Maintenance work including cleaning, clearing, silt removal by beneficiaries at least once per year, to ensure adequate irrigation. - Properly ensure adequate handover, during the construction period UBALE staff will train WUA (Water User Associations) in how to manage the system, technical maintenance issues, and water management. Training will include the development of maintenance action plans, resource mobilization, governance, advocacy as well as canal and structure maintenance. 	<ul style="list-style-type: none"> - Operational Infrastructure Management Committee - Regular maintenance is done - Infrastructure is operational 	After asset hand over to management committee	"Community Management committee" or Water User Association

1.2. Mitigation Measures for village flooding protection dykes

Activity	Potential Impacts	Mitigation measures	Monitoring indicators	Timing and frequency	Responsible Parties
1. Land picketing where runoff is strong and following contours	Perturbation of vegetation cover during picketing, and use of stems	<ul style="list-style-type: none"> - Minimize vegetation cover perturbation 	<ul style="list-style-type: none"> - No sign of vegetation perturbation around picket 	Before establishing the dykes	"Community Team Leaders" during FFA activities
2. Land clearing, top soil removal, de-stumping/ tree	Destruction of vegetation during land clearing,	<ul style="list-style-type: none"> - Work will be limited to the area required (no un-used land will be cleared). 	<ul style="list-style-type: none"> - Minimal area cleared 	Daily during the construction phase	"Community Team Leaders" during FFA activities

removal for dyke establishment	Soil erosion could increase during this phase,	- Soil erosion and siltation will be minimized using mechanical and biological erosion control techniques.	- Mechanical and biological erosion control measures in place	Daily during the construction phase	"Community Team Leaders" during FFA activities
	Siltation of land downstream,	- Ensure soil compacting to avoid siltation of downstream land	- No evidence of land siltation downstream	Daily during the construction phase	"Community Team Leaders" during FFA activities
	Scattering of plant debris.	- Vegetative material will be used for composting, for staking, and for home heating and cooking material, and stored when necessary away from potable water sources.	- Compost pit or appropriate location for debris - Debris is composted and/or otherwise disposed of	Daily during the construction phase	"Community Team Leaders" during FFA activities
3. Staking and digging canals,	Risk of soil erosion and siltation	- The slope of the canal will be constructed using technical norms to reduce erosion risks. - A schematic plan showing the cross sectional shape and size of each canal will be developed	- Slopes are moderate (<15 degrees), and planted with locally appropriate species - The sides of the canals are stable	Once a week during construction phase	Infrastructure supervisor and GoM staff
	Air pollution from excavations and compacting	- Workers will be located at a suitable distance from each other, to minimize the production and problems related to dust. - Only people involved in diggings have to stay at the site - Workers will wear mask to protect from dust and pollution	- Workers wear masks and are generally located at least 1 m apart during construction (when possible).	Daily during the construction phase	"Community Team Leaders" during FFA activities
	Soil deposits in the parcel	- Ensure soil compacting to avoid siltation of downstream land	- No evidence of soil erosion at the scheme	During implementation phase.	"Community Management committee"
4. Canals profile	Canals may be blocked if topography pathways are not properly analyzed	- Properly dig canals in appropriate technical norms - Embankments will be hand compacted with recycled commodity bags protected with vetiver grass.	- Water flowing along canals, there is no water blocked	At the end of the concrete canal construction	Infrastructure supervisor and GoM staff and "Community Management committee"

5. Removal of landslides and siltation	Increased soil erosion and siltation if debris is inappropriately removed and stored	<ul style="list-style-type: none"> - Debris will be stored in an appropriate location - Removal of debris to appropriate locations 	<ul style="list-style-type: none"> - Compost pit or appropriate location for debris 	At the end of the concrete canal construction	Infrastructure supervisor and GoM staff "Community Management committee"
6. Hardware construction (concrete canals, solar panels support)	Social conflicts if canals are crossing private land or for solar panel infrastructure in private land	<ul style="list-style-type: none"> - Conduct inventory of land owner all along concrete canals, - For private land, require a legal authorization for the construction - Construction will be limited to the minimum area required, and construction will be implemented by skilled workers. - To the extent possible surface materials (stones, sand, etc.) will be used. 	<ul style="list-style-type: none"> - Hardware constructed using technical norms and standards. - Anti-erosion measures in place - Acceptance letters signed by all land owners. 	During the construction phase Before construction, for acceptance letters.	Infrastructure supervisor and GoM staff "Community Management committee"
7. Maintenance: Repairs to infrastructure, clearing, silt removal, erosion control, planting trees and grass	Risk of erosion if not done properly	<ul style="list-style-type: none"> - Maintenance work including cleaning, clearing, silt removal by beneficiaries at least once per year, to ensure adequate irrigation. - Properly ensure adequate handover, during the construction period UBALE staff will train WUA (Water User Associations) in how to manage the system, technical maintenance issues, and water management. Training will include the development of maintenance action plans, resource mobilization, governance, advocacy as well as canal and structure maintenance. 	<ul style="list-style-type: none"> - Operational Infrastructure Management Committee - Regular maintenance is done - Infrastructure is operational 	After asset hand over to management committee	"Community Management committee" or Water User Association

1.3 Mitigation Measures to Multipurpose rainwater harvesting system including livestock watering ponds

Activity	Potential Impacts	Mitigation measures	Monitoring indicators	Timing and frequency	Responsible Parties
1. Land picketing following the contour	Perturbation of vegetation cover during picketing	<ul style="list-style-type: none"> - Minimize vegetation cover perturbation 	<ul style="list-style-type: none"> - No sign of vegetation perturbation around picket 	Before establishing	"Community Team Leaders"

					during FFA activities
2. Land clearing, top soil removal, for the establishment of catchment system	Destruction of vegetation during land clearing,	<ul style="list-style-type: none"> - Work will be limited to the area required (no un-used land will be cleared). - Vegetative material will be used for composting, for staking, and for home heating and cooking material, and stored when necessary away from potable water sources. 	<ul style="list-style-type: none"> - Minimal area cleared - Mechanical and biological erosion control measures in place 	Daily during the construction phase	"Community Team Leaders" during FFA activities
	Soil erosion could increase during this phase,	<ul style="list-style-type: none"> - Soil erosion and siltation will be minimized using mechanical and biological erosion control techniques. 	<ul style="list-style-type: none"> - No sign of siltation downstream of the system 	Daily during the construction phase	"Community Team Leaders" during FFA activities
3. Digging the water storage	Risk of soil erosion and siltation	<ul style="list-style-type: none"> - A schematic plan showing shape and size of each pit will be developed 	<ul style="list-style-type: none"> - A schematic plan is available, and is used to determine the appropriate location of each 	Daily during construction phase.	"Community Team Leaders" during FFA activities
	Air pollution from excavations and compacting	<ul style="list-style-type: none"> - Only people involved in diggings have to stay at the site - Worker use protective mask 	<ul style="list-style-type: none"> - Workers wear masks 	Daily during construction phase.	"Community Team Leaders" during FFA activities
	Soil removed from the diggings will be subject to erosion	<ul style="list-style-type: none"> - reused soil to fill pits. 	<ul style="list-style-type: none"> - No sign of soil erosion 	Daily during construction phase.	"Community Team Leaders" during FFA activities
4. Hardware construction (water storage tank, livestock watering place)	Social conflicts if water storage is built on private land	<ul style="list-style-type: none"> - For private land, require a legal authorization for the construction - Construction will be limited to the minimum area required, and construction will be implemented by skilled workers. - To the extent possible surface materials (stones, sand, etc.) will be used. 	<ul style="list-style-type: none"> - Hardware constructed using technical norms and standards. - Anti-erosion measures in place - Acceptance letters signed by all land owners whose land is affected. 	During the construction phase Before construction, for acceptance letters.	Infrastructure supervisor and "Community Management committee"

	Hazardous debris from construction work might injure kids or adults passing near the construction site	<ul style="list-style-type: none"> - Live an area 2 meters wider around the construction site to avoid possible accidents during the construction phase - Put a sign to warn about construction hazards 	<ul style="list-style-type: none"> - Visible sign warning the construction hazards - Zero injury occurred during the construction period 	checking will be done at each visit during construction phase	UBALE Infrastructure Supervisor
5. Maintenance to catchments	Improper maintenance risk that lead to soil erosion and worsen water runoff	<ul style="list-style-type: none"> - Ensure proper training to Water User associations in how to manage the system, technical maintenance issues, and water management. Training will include the development of maintenance action plans, resource mobilization, governance, advocacy. 	<ul style="list-style-type: none"> - Operational Infrastructure Management Committee - Regular maintenance is done 	After construction phase	Catchment committees

1.4 Environmental Mitigation Measures to Watershed Management including tree nurseries installation and tree plantation activities

Activities	Potential impacts	Mitigation measures	Monitoring indicators	Timing and frequency	Responsible Parties
1. Setting up tree nurseries	Soil erosion from poor site selection	<ul style="list-style-type: none"> - Select sites which are not susceptible to erosion (choose flat area) - Support and training to UBALE technicians - Install nurseries on level land, far from drainage areas 	<ul style="list-style-type: none"> - Mastery of mitigation measures by technical staff - Tree nursery site is level 	Before activities are implemented Daily during the construction phase	<ul style="list-style-type: none"> -Technicians -Nurserymen -Community Management committee members
	Destruction of vegetation during land clearing,	<ul style="list-style-type: none"> - Work will be limited to the area required (no un-used land will be cleared) 	<ul style="list-style-type: none"> - Minimal area cleared 	Daily during the construction phase	<ul style="list-style-type: none"> -Technicians -Nurserymen -Community Management committee members
	Soil erosion could increase during this phase, lead to siltation of land downstream,	<ul style="list-style-type: none"> - Soil erosion and siltation will be minimized using mechanical and biological erosion control techniques - Ensure soil compacting to avoid siltation of downstream land 	<ul style="list-style-type: none"> - Mechanical and biological erosion control measures in place - Non visible siltation downstream 	Daily during the construction phase	<ul style="list-style-type: none"> -Technicians -Nurserymen -Community Management committee members

	Scattering of plant debris.	<ul style="list-style-type: none"> - Vegetative material will be used for composting, for staking, and for heating and cooking material, and stored when necessary away from potable water sources. 	<ul style="list-style-type: none"> - Compost pit or appropriate location for debris 	Daily during the construction phase	<ul style="list-style-type: none"> -Technicians -Nurserymen -Community Management committee members
2. Plant production	Social conflicts due to different points of view regarding tree species to produce and to maintenance tasks required	<ul style="list-style-type: none"> - Produce multiple tree species in nurseries to satisfy all community members, - Technical training for workers (maintenance committee members and nurserymen) 	<ul style="list-style-type: none"> - Plants chosen respond to community priorities 	Before activities are implemented	<ul style="list-style-type: none"> - VNRM members
	Risk of natural forest depletion if species are not properly chosen	<ul style="list-style-type: none"> - Ban invasive species and promote rapid growing trees 	<ul style="list-style-type: none"> - No invasive species 	Before activities are implemented	<ul style="list-style-type: none"> - VNRM members
	Soil erosion from barrow pits of materials to fill pockets	<ul style="list-style-type: none"> - Source nursery material from appropriate locations, and ensure they are rehabilitated after exploitation 	<ul style="list-style-type: none"> - Barrow pits rehabilitated 	At the end of construction phase	Community Management committee members
	Pollution from plastic bags	<ul style="list-style-type: none"> - Appropriate plastic waste disposal 	<ul style="list-style-type: none"> - Appropriate waste sites available for plastic bags 	Daily during the construction phase	<ul style="list-style-type: none"> -Technicians -Nurserymen Community Management committee members
3. Hole digging following the half-moon system	Erosion due to water diversion and canals formed around contour structures during heavy rains,	<ul style="list-style-type: none"> - Respecting technical norms for tree half-moon hole spacing, size - Stake and dig half-moon to follow the contour - Place excavated material above the holes 	<ul style="list-style-type: none"> - Respect of dimensions and disposition of half-moons (good staking) - Reused of excavated material 	Daily during the construction phase	<ul style="list-style-type: none"> -Technicians -Nurserymen -Community Management committee members
4. Tree Plantation	Soil erosion and siltation	<ul style="list-style-type: none"> - Don't scatter soil during tree planting and refilling of holes within the half-moon - Put back into the hole all the soil and material removed - Put into place and train the community maintenance committee 	<ul style="list-style-type: none"> - Tree planting follows technical norms and standards - No excavation material is visible in the reforested area 	After tree planting and after each rain	<ul style="list-style-type: none"> -Community Management committee members VMNR

			- Existence of maintenance committees		
5. Watershed and hillside protection (dykes, trenches, half-moon, etc)	Soil erosion Ditch and ravine formation due to poor engineering techniques, soil tillage techniques and infiltration trenches Collapse of infiltration ditches	<ul style="list-style-type: none"> - Respect technical norms and standards for watershed management according protective system chosen - Contour planting - Develop anti-erosive bands and systems with live fences (during the rainy season) and water infiltration ditches (just below live fences, in the dry season), and cover cropping - Develop anti-erosive stone bands and water infiltration 	<ul style="list-style-type: none"> - Contour planting - Anti-erosive bands, live fences coupled with water infiltration structures 	Daily during the construction phase	<ul style="list-style-type: none"> -Technicians -Nurserymen -Community Management committee members
6. Monitoring committee to ensure monitoring and maintenance of newly planted trees	Social conflicts, conflict of interest	<ul style="list-style-type: none"> - Integrate the community and all local authorities in the entire process (from planning to implementation and monitoring and evaluation, maintenance) - Define the roles and responsibilities of each member of the community monitoring and maintenance committee, and of the committee as a whole 	<ul style="list-style-type: none"> - Committee members have clear roles and responsibilities which are recognized by local authorities - Absence of social conflict due to reforestation activities 	During all phases: before, during and at the end of the construction phase	<ul style="list-style-type: none"> -Community Management committee members -VNRM members
7. Management norms and rules	Social conflicts, conflict of interest	<ul style="list-style-type: none"> - Put into place management conventions for tree nurseries and reforested areas (internal bylaw) in collaboration with the community, which are recognized by the community. 	<ul style="list-style-type: none"> - Hand over validated by villages heads - Existence of internal bylaw for management 	At the end of the construction phase	<ul style="list-style-type: none"> -Community Management committee members -VNRM members

2. BEO Condition Original EMMP

Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
Purpose1: Smallholder farming households sustainably increase productivity of nutritious and profitable farm products				
<p><i>Female, male and young smallholder farmers access and protect key productive assets</i></p> <p><i>Access to :</i></p> <ul style="list-style-type: none"> - seeds of drought-tolerant grains, - bio-fortified crops, - fruit trees, - selected vegetables, and - poultry; - outreach from Community Animal Health Workers (CAHW Paravets), - crop & livestock insurance providers 	<p><i>IEE Required, to look after social adverse impact</i></p> <p>Impacts on internal socio-organizational aspect</p> <ul style="list-style-type: none"> • Risk of marginalization of "targeted groups" by the society, for this group will benefit a number of assets • Risk of social conflict for the "Seed fairs" (DiNER Fairs) • Risk of using vets product indiscriminately and could have impacts on health 	<p>Conduct an information session following the rules of good governance with Heads of villages to avoid misunderstandings and nepotism</p> <p>Train CAHW paravets on practicing" safe use" of products they are selling and farmers might use</p>	<p>at least 80% of information sessions on SMART skill and DiNER Fairs, following the rules of good governance (transparency, participation, and accountability)</p> <p>At least one training session on "safe use" of the vet product given to CAHW per year</p>	<p>UBALE implementing partners</p> <p>DADO team at the district level</p>

Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
<p><i>Female, male and young smallholder farmers adopt Climate-Smart Agriculture practices and improve management of soil, water, and biological resources.</i></p> <p><i>Female, male and young smallholder farmers intensify and diversify their sources of nutritious foods</i></p> <ul style="list-style-type: none"> - Promote Conservation Agriculture (CA) and agro-forestry, - Set up 2,064 demonstration plots - Set up homestead garden and promote rainwater harvesting and storage 	<p>IEE Required to look after water and soil management</p> <p>Impacts on soil resources</p> <ul style="list-style-type: none"> • Risk of soil erosion for field work for the "demonstration plots" • Risk of degradation of natural hedges for mulching in conservation agriculture (CA) and biomass for compost • Conflict between fodder for cattle and mulching for AC <p>Natural environment</p> <ul style="list-style-type: none"> • Risk of destruction of existing trees (neem, blue gum, etc.) for use in bio-pesticide 	<p>Minimize the risk of soil erosion for the demonstration plots by following promoted soil conservation measures like box ridges and ridge realignment on contours and mulching</p> <p>Plantation of biomass sources for mulch and compost as well as fodder through the watershed facilities</p> <p>Promote planting of early maturing and drought resistant varieties that need less water to not harm the domestic water</p>	<p>Minimum soil erosion</p> <p>Number of demo plots planted with multi-purpose plant sources of biomass for mulch and compost as well as fodder (vetiver, moringa, banana tree)</p> <p>Promotion of varieties that support little water</p>	<p>UBALE implementing partners</p> <p>Field agents</p> <p>DADO team and Research institution</p>

Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
Purpose 2: Stunting among children under five is reduced				
<p><i>Communities are empowered to sustainably address sanitation and hygiene issues within their villages</i></p> <ul style="list-style-type: none"> - rehabilitate latrines with hand washing facilities at 29 health clinics. (P2) 	<p>IEE Required to look after hygiene and sanitation facilities set up</p> <p>Impacts on soil resources</p> <ul style="list-style-type: none"> • Risk of erosion for digging pits for latrines mainly on the type of friable soil in the districts of Chikwawa and Nsanje • Risk of erosion for rehabilitation work of sanitation facilities in Community-based health centers <p>Impacts on water resources</p> <ul style="list-style-type: none"> • Risk of water contamination if the latrines are poorly placed in relation to the water source • risk of water contamination if the 	<p>Conduct an Action Research on model of latrine adapted in areas where the soil is very sandy, and make model available to communities after several Behavior change communication (BCC).</p> <p>Compacting disturbed soil during the rehabilitation work</p> <p>Ensure proper latrine location in relation to water sources</p>	<p>Number of appropriate model of latrines identified and built by beneficiaries</p> <p>ESF for the latrine work rehabilitation and hand washing facilities, defining the impact mitigation measures on soil, water, natural environment resources and health</p>	<p>UBALE implementing partner in collaboration with DEHO team</p> <p>CRS (develop an ESF by type of infrastructure to be set during the LOP)</p>

Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
<p><i>Pregnant and Lactating Women and Child Under 2Y have increased year-round consumption of quality diets</i></p> <ul style="list-style-type: none"> - teach improved recipes, cooking practices, - food processing and storage - preservation techniques - production of small livestock, - Cooking of food distributed 6-23 months (including 419 MT of pigeon peas and 3380 MT of Corn Soya Blend) 	<p>waste water is not well drained</p> <p>Impacts on natural environment</p> <ul style="list-style-type: none"> • Risk of wood surplus consumption for cooking sessions "Community-led Complementary Feeding and Learning Sessions"(CCFLS) • Risk of wood surplus consumption for the preparation of food distributed to pregnant women and children 6-23 months; including 419 MT of pigeon peas and 3380 MT of Corn Soya Blend 	<p>Wastewater from "hand washing facilities" and evacuation facilities should have good drainage systems</p> <p>Plant necessary species of trees after being informed by an analysis of needed wood consumption for CCFLS session as well as for the cooking of food to be distributed during the LOP (419 MT of pigeon peas and 3380 MT Corn soya blend); as well as for the latrine manufacturing at household level; and translate that into hectares of reforestation.</p> <p>Adoption of 30% fuel efficient stove by Households</p>	<p>Reforestation of __ hectares of land which will have its trees used as wood.</p> <p>Tree planted 25% in Y2, 40% in Y3 and 35% in Y4 during the LOP</p>	<p>CRS in collaboration with the Ministry of forests</p> <p>UBALE implementing partners</p>

Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
	<ul style="list-style-type: none"> Risk of excess wood cutting for making latrine slab <p>Impacts on Human resources and internal social organization :</p> <p>Risk of social conflict if all the pregnant women and children 6 to 23 months are not well targeted to benefit "food supplement"</p>	<p>Community sensitization meetings to encourage all households that meet the standards to register with the Health Surveillance Assistant for their area to ensure that they have not missed out on registration.</p> <p>Health Passport Books to be referenced in confirming the status of the beneficiaries</p>	30% of HH adopt fuel efficient stove	UBALE implementing partners
Purpose 3: Households and communities are more resilient to shocks				

<p><i>Communities develop and implement NRM plans to increase resilience</i></p> <ul style="list-style-type: none"> - establish one tree nursery per GVH, - promote Farmer Managed Natural Regeneration(FMNR) on communal lands - Watershed management. 	<p>IEE Required to look after a forestation;</p> <p>Impacts on soil resources:</p> <ul style="list-style-type: none"> • Risk of soil stripping for tree nurseries setting up <p>Impacts on water resources</p> <ul style="list-style-type: none"> • Potential water point conflict for tree nurseries and domestic use <p>Impact on natural environment</p> <ul style="list-style-type: none"> • Risk of promoting invasive species or which exhaust the soil <p>Impact on human resource and socio-economic aspects,</p> <ul style="list-style-type: none"> • Risk of mismanagement of improved areas 	<p>ESF for the Natural resources management (NRM) work, approved including standards to, be respected for nurseries as well as the choice of species to promote for reforestation or natural regeneration.</p> <p>Stabilize all loose soils after making the beds using either stones, grasses</p> <p>Where communities keep livestock the program will promote multiple use of water for tree nursery establishment as well as livestock.</p> <p>Promote natural regeneration of vegetation</p>	<p>Number of afforestation sites following the environmental management plan included in the approved activity specific / programmatic IEE report.</p>	<p>UBALE implementing partners / CRS</p>
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Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
	(natural regeneration or replanted forests)	and sustainable harvesting of forest products. Strengthen the capacity of the NRM Management Committee by training the committee in governance and technical areas		
<p><i>Communities have increased access to productive communal assets</i></p> <ul style="list-style-type: none"> - rehabilitate dams for watering livestock (P1) - riverbank-protection measures in critical areas 	<p>IEE Required to look after watershed management</p> <p>Impacts on soil resources</p> <ul style="list-style-type: none"> • Risk of erosion in the establishment of water points for livestock; <p>Impacts on water resources</p> <ul style="list-style-type: none"> • Risk of depletion of water resources if water storage analysis is not well known or considered 	<p>Separate location of water points for livestock (distance of water source for the population, soil type)</p> <p>Promote natural regeneration for soil protection measures until the plants against erosion will grow</p>	1 ESF approved for dams for watering livestock, including all mitigation measures following the context of each district and the potential impacts on soil, water, natural environment and human resources.	UBALE implementing partners / CRS

Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
	<p>Impacts on natural environment</p> <ul style="list-style-type: none"> • Risk of tree cutting along the course of location of water points for livestock • Air pollution from construction works; 	<p><i>(**detailed mitigation measures should be incorporated within ESF).</i></p> <p>Plant trees on hillside around water source to ensure forest cover upstream of the source and allowing water infiltration and water recharge within the watershed sites</p> <p>Grow vegetation on borrowing area to take rocks and stones</p> <p>Sensitize FFA participants to protect themselves from dust</p>	<p>1 ESF approved for riverbank protection, including all mitigation measures to consider following the context of each district and the potential impacts on soil, water, natural environment and human resources.</p>	<p>UBALE implementing partners / CRS</p>

Activities	Description of Impact	Mitigation Measures	Monitoring indicator	Responsible for monitoring
	<p>Impact on human resource and socio-economic aspects</p> <ul style="list-style-type: none"> • Risk of using drinking troughs for cattle to other purposes during the dry season • Risk of social conflict in the selection of participants in "Food For Assets" activities • Risk of mismanagement of irrigation infrastructure 	<p>Close drinking troughs</p> <p>Well inform the community about criteria for choosing FFA participants</p> <p>Strengthen the capacity of management committees to ensure the maintenance of irrigation infrastructure</p>		<p>UBALE implementing partners / CRS</p>